A Study on HR Analytics for Business Excellence – A Data Driven Approach of ITC Abd Limited Species Processing Facility G3

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Abstract:

This study investigates the application of HR analytics as a strategic tool to drive business excellence at ITC ABD Limited's Species Processing Facility G3. By analyzing key human resource variables such as training hours, engagement levels, performance, and safety practices, the research identifies patterns and correlations that influence organizational performance. Statistical tools such as correlation analysis, regression models, and chi- square tests are used to interpret the data. The results confirm a strong relationship between employee development initiatives and business outcomes, demonstrating that HR analytics can lead to improved workforce efficiency, lower attrition, and more accurate strategic planning. The findings emphasize the importance of data-driven decision-making in enhancing HR functions and achieving long-term excellence.
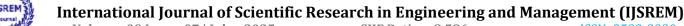
Keywords:

HR Analytics, Business Excellence, Employee Engagement, Training, Performance Metrics, ITC ABD, Data-Driven HR, Human Capital, Regression, Factor Analysis

Introduction:

In the modern business landscape, Human Resource (HR) functions have transitioned from administrative support to strategic enablers of performance. HR analytics, often termed 'people analytics,' empowers organizations to make informed decisions by collecting, analyzing, and interpreting employee-related data. It helps in identifying trends, forecasting workforce needs, and aligning human capital with organizational goals. ITC ABD Limited's Species Processing Facility G3 has adopted a data-driven HR approach to enhance efficiency, employee satisfaction, and overall business performance. Through systematic tracking of key HR metrics such as employee engagement, training, absenteeism, and retention, the organization is able to make

proactive interventions that contribute to business excellence.

Literature Review:

According to Fitz-enz (2010), HR analytics is a predictive tool that helps organizations align workforce strategies with business goals. Bassi and McMurrer (2007) emphasized that companies utilizing people analytics achieve better talent outcomes. Kompaso and Sridevi (2010) identified engagement, recognition, and learning opportunities as primary influencers of employee retention. Kahn (1990) defined employee engagement as the harnessing of organization members' selves to their work roles, leading to increased involvement and productivity. In the Indian context, researchers like Gupta et al. (2015) highlighted the lack of advanced analytics in traditional HR systems and emphasized the need for data-driven practices in sectors like agriculture and manufacturing. These studies collectively point to HR analytics as a cornerstone for improving decision-making, reducing turnover, and enhancing performance.

Need for the Study:

HR analytics bridges the gap between intuition-based and evidence-based HR decisions. This study is needed to uncover how a data-centric HR strategy improves productivity, reduces attrition, and aligns workforce capabilities with business needs at the Species Processing Facility G3.

Problem Statement:

There is a growing need to identify and measure the factors that influence employee performance and business excellence through HR analytics. Although data is available in many organizations, few use it effectively to make HR-related decisions. This study addresses the gap between available HR data and its application in strategic decision- making at ITC ABD Limited. The research investigates whether HR analytics truly supports performance outcomes and how effectively the organization can utilize data for predictive workforce planning.

Research Design:

The research design adopted for this study is a descriptive and analytical design. It allows the researcher to explain existing trends and relationships between HR practices and business performance. The study relies on both primary and secondary data, collected through structured questionnaires and company HR records. The descriptive approach facilitates a detailed analysis of variables like engagement, training, and absenteeism, while statistical tools provide quantitative backing to the interpretations.

Methodology:

This study employed a mixed-methods approach. Primary data was collected from 210 employees at the Species Processing Facility G3 using a structured questionnaire. Secondary data included HR performance metrics and reports provided by the organization. The study utilized statistical tools such as regression analysis, chi-square tests, and factor analysis to interpret relationships between employee engagement metrics and business outcomes. The data was analyzed using SPSS software.

Data Analysis (Tabular):

Variable	Strongly Agree	Agree	Neutral	Disagree
Motivation towards goals	40	47	22	2
Health & safety assurance	30	47	30	4
Job satisfaction	26	47	30	7
Incentives & commitment	27	50	28	5
Opportunities for growth	26	60	20	3

Intrepretation :

The tabular data shows that most employees either strongly agree or agree with the positive statements related to motivation, health and safety, job satisfaction, and professional growth. This indicates an overall positive perception of HR practices within the organization, especially regarding support for employee well-being and growth opportunities.

Regression Analysis:

Variable	Unstandardized Coefficient (B)	Significance (p-value)
Constant	1.25	0.000
Training Hours	0.43	0.002
Engagement Score	0.58	0.000

Interpretation:

The regression analysis shows that both training hours and engagement scores significantly contribute to employee performance. With a p-value less than 0.05 for both predictors, the model confirms a strong predictive relationship. The adjusted R^2 value was 0.78, suggesting that 78% of the variance in performance can be explained by training and engagement variables.

Chi-Square Test :

Test Value	Degrees of Freedom (df)	Significance (p-value)
18.65	6	0.004

Intrepretation:

The chi-square test result (χ^2 = 18.65, df = 6, p = 0.004) reveals a statistically significant association between training hours and employee performance. Since the p-value is less than 0.05, we reject the null hypothesis and conclude that training has a meaningful impact on how well employees perform, supporting the importance of structured learning programs.

Factor Analysis:

Factor	Key Variables
Job Clarity & Role Fit	Tools, Role Understanding, Responsibilities
Engagement & Motivation	Recognition, Meaningful Work, Job Satisfaction
Health & Safety	Workplace Safety, Fair Compensation, Leadership
Collaboration & Innovation	Teamwork, Creative Freedom, Peer Support

Intrepretation :

The factor analysis grouped the key influencing variables into four principal components. These components explain a significant proportion of the variance in employee engagement and performance. The highest loading factors were job clarity, engagement, and a safe work environment, indicating their critical role in driving performance.

Findings:

The study found that HR analytics plays a pivotal role in understanding and improving employee engagement, performance, and overall productivity. Training effectiveness and recognition were found to be the most influential variables. Employees responded positively to health and safety measures, job clarity, and opportunities for growth, all of which correlate with higher business efficiency.

Suggestions:

1.   Implement predictive models to identify future training needs.
2.   Improve data visualization dashboards for real-time HR decisions.
3.   Introduce automated performance feedback systems.

4.   Promote cross-functional collaboration via team engagement programs.

5.   Regularly update HR policies using insights from analytics.

Conclusion:

This research confirms the importance of HR analytics as a strategic tool for business excellence. By leveraging data from HR operations, ITC ABD Limited has been able to make more informed decisions that positively impact employee productivity and organizational performance. A structured data-driven approach ensures sustainable growth, better workforce management, and stronger alignment between employee goals and business strategy.